

Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Fan Coils – Maestro MTL-ECM

From **Sabiana S.p.A.**

EPD of multiple products, based on a representative product.
Included products:

- 2 pipe: MTL-ECM 13, MTL-ECM 23, MTL-ECM 33, MTL-ECM 43, MTL-ECM 53, MTL-ECM 14, MTL-ECM 24, MTL-ECM 34, MTL-ECM 44, MTL-ECM 54, MTL-ECM 64, MTL-ECM 66
- 4 pipe: MTL-ECM 13+1, MTL-ECM 23+1, MTL-ECM 33+1, MTL-ECM 43+1, MTL-ECM 53+1. MTL-ECM 14+1, MTL-ECM 24+1, MTL-ECM 34+1, MTL-ECM 44+1, MTL-ECM 54+1, MTL-ECM 13+2, MTL-ECM 23+2, MTL-ECM 33+2, MTL-ECM 43+2, MTL-ECM 53+2, MTL-ECM 14+2, MTL-ECM 24+2, MTL-ECM 34+2, MTL-ECM 44+2, MTL-ECM 54+2

Programme:	International EPD System, www.environdec.com
Programme operator:	EPD International AB
Type of EPD:	EPD of multiple products from a company
EPD registration number:	EPD-IES-0035933:001
Version date:	2026-11-03
Validity date:	2031-11-02

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	International EPD System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Accountabilities for PCR and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): Construction Products, 2019:14, version 2.0.1 and c-PCR-027 Fan coils (c-PCR to PCR 2019:14)
PCR review was conducted by: Technical Committee of the International EPD System. The review panel may be contacted via support@environdec.com c-PCR review was conducted by: Gorka Benito Alonso
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Guido Croce Approved by: International EPD System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same first-digit version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

About Sabiana S.p.A

Sabiana is an Italian manufacturer of heating and air conditioning products, leader for hydronic terminal fan coil unit.

Sabiana headquarters is located in Corbetta (MI) and production facilities are all located nearby: two sites in Corbetta (MI) and two sites in Magenta (MI).

Sabiana's continuous innovation and quality enhancement strategy is pursued by the continuous R&D investments, with the adoption of advanced 3D design and simulations and modern laboratories for product testing and inspection, by continuous investments on advanced production equipment and new technologies and by the implementation of IoT across the organization.
Strong commitment to quality and sustainability is witnessed by the long-held ISO 9001 certification of the company and the ISO 14001 certification of the main production sites.

Sustainability and Circular Economy became pillars of the company strategy, with the main results[1] of:

- 96.6% of production material sourced from the European Union (of which 83.6% from Italian suppliers, most of them located in a short distance)
- Self-production of 60% of the overall electrical energy consumption, with the target of 80% in few years.
- Continuous increase of % of reusable and recyclable materials in production

The Plants

Name and location of production site(s):
Sabiana plants involved in the production process of fan coils are:
Sabiana 1: via Piave 53, 20011 Corbetta (MI), Italy
Sabiana 2 and 3: via Virgilio 2, 20013 Magenta (MI), Italy
Sabiana 4: via Zanella 27, 20011 Corbetta (MI), Italy



Aerial view of Sabiana headquarter

[1] Referred to 2022

Product information

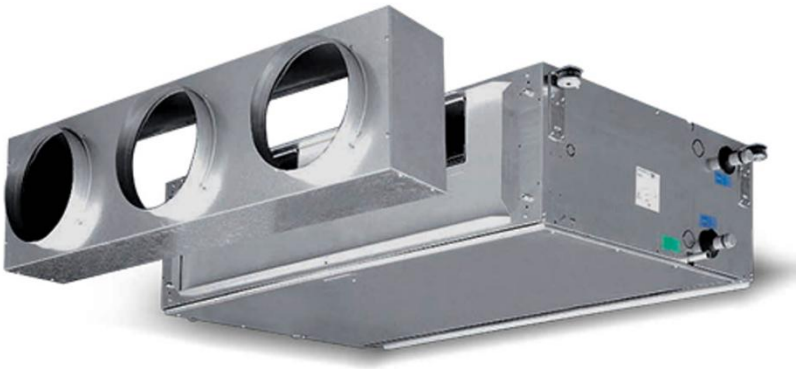
Product name: Fan Coils Maestro MTL-ECM

Product identification: Hydronic Fan Coil Unit (FCU) is defined as a factory-made single assembly, which provides one or more of the functions of forced circulation of air, heating, cooling, dehumidification and filtering of air, but which does not include the source of heating or cooling. This device includes at least a liquid-to-air heat exchanger and a fan and may be designed for free or ducted intake air and/or for free or ducted delivery of supply air. (BS EN 1397:2021).

Geographical scope: A1-A2 Global, A3 Italian, A4-A5, B, C European

UN CPC code: UN CPC Code: 43912 and HS 2007 8415.83

Product description: The Maestro MTL-ECM high pressure fan coils with EC electronic motor and inverter board are produced in 6 sizes equipped with 3, 4 or 6 row coil and with the possibility to add a 1 or 2 row coil for 4 pipe systems.
In high pressure ducted fan coils, there is the ability to continuously vary the air flow gives great regulation and control flexibility, at the same time ensuring excellent environmental conditions and extremely low electrical consumption. The ECM range makes use of the excellent experience gained with the Cassette fan coils with inverter board, first in the world in production since 2009, and which has had great success on all markets.
The innovative synchronous electronic motor with permanent magnets, is controlled by an electronic board (inverter).
The air flow rate can be varied continuously by means of a 1-10 V signal generated by Sabiana controls or by independent control systems.
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Full compliance with the Electromagnetic Compatibility Directive and with the other severe Standards in force is certified by an independent institute.
The inverter board that controls the motor operation is powered by 230 Volt, single-phase and, with a switching system, it generates a three-phase frequency modulated, wave form power supply. The electric power supply required for the machine is therefore single-phase with voltage of 230 V and frequency of 50 - 60 Hz.
The Maestro MTL-ECM fan coils are designed and built for concealed installations, they have small dimensions, are very silent and have a particularly interesting price in relation to their performance (elevated air flow rates and available static pressures up to 240
Pa). They are suitable for climate control for small and medium commercial and sports environments or for large civil environments and integrate perfectly in regular
false ceilings.



The present EPD covers the 34 models of Fan Coils Maestro MTL-ECM shown in the following table.

N°	Model	TYPE	TUBE SYSTEM
1	MTL-ECM 13	Ducted Fan Coil	2-pipe
2	MTL-ECM 23	Ducted Fan Coil	2-pipe
3	MTL-ECM 33	Ducted Fan Coil	2-pipe
4	MTL-ECM 43	Ducted Fan Coil	2-pipe
5	MTL-ECM 53	Ducted Fan Coil	2-pipe
6	MTL-ECM 14	Ducted Fan Coil	2-pipe
7	MTL-ECM 24	Ducted Fan Coil	2-pipe
8	MTL-ECM 34	Ducted Fan Coil	2-pipe
9	MTL-ECM 44	Ducted Fan Coil	2-pipe
10	MTL-ECM 54	Ducted Fan Coil	2-pipe
11	MTL-ECM 64	Ducted Fan Coil	2-pipe
12	MTL-ECM 66	Ducted Fan Coil	2-pipe
13	MTL-ECM 13+1	Ducted Fan Coil	4-pipe
14	MTL-ECM 23+1	Ducted Fan Coil	4-pipe
15	MTL-ECM 33+1	Ducted Fan Coil	4-pipe
16	MTL-ECM 43+1	Ducted Fan Coil	4-pipe
17	MTL-ECM 53+1	Ducted Fan Coil	4-pipe
18	**MTL-ECM 14+1**	Ducted Fan Coil	4-pipe
19	MTL-ECM 24+1	Ducted Fan Coil	4-pipe
20	MTL-ECM 34+1	Ducted Fan Coil	4-pipe
21	MTL-ECM 44+1	Ducted Fan Coil	4-pipe
22	MTL-ECM 54+1	Ducted Fan Coil	4-pipe
23	MTL-ECM 13+2	Ducted Fan Coil	4-pipe
24	MTL-ECM 23+2	Ducted Fan Coil	4-pipe
25	MTL-ECM 33+2	Ducted Fan Coil	4-pipe
26	MTL-ECM 43+2	Ducted Fan Coil	4-pipe
27	MTL-ECM 53+2	Ducted Fan Coil	4-pipe
28	MTL-ECM 14+2	Ducted Fan Coil	4-pipe
29	MTL-ECM 24+2	Ducted Fan Coil	4-pipe
30	MTL-ECM 34+2	Ducted Fan Coil	4-pipe
31	MTL-ECM 44+2	Ducted Fan Coil	4-pipe
32	MTL-ECM 54+2	Ducted Fan Coil	4-pipe
33	MTL-ECM 64+2	Ducted Fan Coil	4-pipe
34	MTL-ECM 66+2	Ducted Fan Coil	4-pipe

According to the General Programme Instruction (GPI) v. 5.0.1 and the PCR 2019:14 "Construction products" v.2.0.1, the results for each category of impact are represented for the product MTL-ECM 14+1, identified as representative. This product is the model of the MTL-ECM range has the highest sales volumes based on the 2024 data.

Technical data

2-pipe units:

COOLING (summer mode)

Entering air temperature: +27°C d.b. +19°C w.b.
Water temperature: + 7°C E.W.T. +12°C L.W.T.

HEATING (winter mode)

Entering air temperature: +20°C
Water temperature: +45 °C E.W.T. +40 °C L.W.T.

MODEL		MTL-ECM 13			MTL-ECM 23			MTL-ECM 33		
Speed		4,5 MIN	7 MED	9 MAX	4 MIN	6 MED	8 MAX	4,5 MIN	6,5 MED	8 MAX
Air flow	m³/h	803	1133	1349	968	1401	1833	1421	2009	2462
Available pressure	Pa	23	50	67	21	50	82	22	50	72
Cooling total capacity	kW	3,80	4,57	5,07	4,62	5,90	6,96	6,58	8,14	9,22
Cooling sensible capacity	kW	2,97	3,65	4,06	3,46	4,49	5,50	5,00	6,27	7,29
Heating capacity	kW	4,55	5,58	6,29	5,36	7,03	8,44	7,63	9,69	11,04
Fan Power input	W	43	93	150	46	114	232	78	201	351

MODEL		MTL-ECM 43			MTL-ECM 53		
Speed		5,5 MIN	7,5 MED	10 MAX	3 MIN	5 MED	7 MAX
Air flow	m³/h	1895	2513	3172	2480	3399	3985
Available pressure	Pa	25	50	77	25	50	70
Cooling total capacity	kW	8,77	10,44	11,87	12,13	14,74	16,1
Cooling sensible capacity	kW	6,57	7,93	9,14	9,46	11,8	13,04
Heating capacity	kW	10,70	13,07	15,25	14,70	18,46	20,54
Fan Power input	W	111	258	553	158	376	610

MODEL		MTL-ECM 14			MTL-ECM 24			MTL-ECM 34		
Speed		4,5 MIN	7 MED	9 MAX	4 MIN	6 MED	8 MAX	4,5 MIN	6,5 MED	8 MAX
Air flow	m³/h	780	1100	1310	940	1360	1780	1380	1950	2390
Available pressure	Pa	26	50	70	24	50	85	25	50	75
Cooling total capacity	kW	4,14	5,11	5,61	5,44	6,86	7,94	7,87	9,70	10,81
Cooling sensible capacity	kW	3,24	4,18	4,72	4,08	5,36	6,44	5,93	7,61	8,72
Heating capacity	kW	5,18	6,80	7,76	6,42	8,64	10,62	8,64	11,25	13,06
Fan Power input	W	40	88	144	44	110	225	80	195	340

MODEL		MTL-ECM 44			MTL-ECM 54			MTL-ECM 64		
Speed		5,5 MIN	7,5 MED	10 MAX	3 MIN	5 MED	7 MAX	3 MIN	5 MED	7 MAX
Air flow	m³/h	1840	2440	3080	2400	3320	3920	2825	4295	5205
Available pressure	Pa	28	50	80	25	50	70	22	50	74
Cooling total capacity	kW	10,47	12,39	13,99	13,73	16,70	18,17	16,91	21,91	24,30
Cooling sensible capacity	kW	7,90	9,65	11,23	10,46	13,26	14,75	12,85	17,79	20,30
Heating capacity	kW	12,13	15,15	18,08	15,90	20,51	23,25	18,63	25,83	29,76
Fan Power input	W	110	253	530	166	383	702	106	330	636

MODEL		MTL-ECM 66		
Speed		3 MIN	6 MED	9 MAX
Air flow	m³/h	2825	4295	5205
Available pressure	Pa	22	50	74
Cooling total capacity	kW	20,36	27,20	30,64
Cooling sensible capacity	kW	14,47	20,39	23,48
Heating capacity	kW	20,74	29,57	34,54
Fan Power input	W	109	339	654

4-pipe units:

COOLING (summer mode)

Entering air temperature: +27°C d.b. +19°C w.b.
Water temperature: + 7°C E.W.T. +12°C L.W.T.

HEATING (winter mode)

Entering air temperature: +20°C
Water temperature: +65°C E.W.T. +55°C L.W.T.

MODEL		MTL-ECM 13+1			MTL-ECM 23+1			MTL-ECM 33+1		
Speed		4,5 MIN	7 MED	9 MAX	4 MIN	6 MED	8 MAX	4,5 MIN	6,5 MED	8 MAX
Air flow	m³/h	728	1009	1213	892	1300	1698	1310	1862	2280
Available pressure	Pa	23	50	69	21	50	82	22	50	72
Cooling total capacity	kW	3,60	4,38	4,86	4,56	5,82	6,83	6,49	8,03	9,10
Cooling sensible capacity	kW	2,81	3,46	3,89	3,42	4,42	5,33	4,93	6,18	7,19
Heating capacity	kW	3,33	4,05	4,48	4,20	5,26	6,06	5,72	6,98	7,78
Fan Power input	W	41	90	148	46	115	234	79	203	349

MODEL		MTL-ECM 43+1			MTL-ECM 53+1		
Speed		5,5 MIN	7,5 MED	10 MAX	3 MIN	5 MED	7 MAX
Air flow	m³/h	1756	2328	2949	2456	3362	3766
Available pressure	Pa	25	50	77	25	50	70
Cooling total capacity	kW	8,66	10,35	11,76	12,00	14,61	15,93
Cooling sensible capacity	kW	6,50	7,87	9,05	9,4	11,7	12,75
Heating capacity	kW	7,82	9,20	10,43	10,90	12,67	14,25
Fan Power input	W	113	260	551	161	380	609

MODEL		MTL-ECM 14+1			MTL-ECM 24+1			MTL-ECM 34+1		
Speed		4,5 MIN	7 MED	9 MAX	4 MIN	6 MED	8 MAX	4,5 MIN	6,5 MED	8 MAX
Air flow	m³/h	750	1040	1250	920	1340	1750	1350	1920	2350
Available pressure	Pa	26	50	72	24	50	85	25	50	75
Cooling total capacity	kW	4,04	4,94	5,46	5,36	6,79	7,87	7,76	9,59	10,70
Cooling sensible capacity	kW	3,14	4,01	4,55	4,01	5,30	6,35	5,83	7,51	8,61
Heating capacity	kW	3,43	4,18	4,62	4,33	5,42	6,25	5,90	7,20	8,02
Fan Power input	W	40	88	144	44	115	225	80	200	340

MODEL		MTL-ECM 44+1			MTL-ECM 54+1		
Speed		5,5 MIN	7,5 MED	10 MAX	3 MIN	5 MED	7 MAX
Air flow	m³/h	1810	2400	3040	2380	3300	3860
Available pressure	Pa	28	50	80	26	50	68
Cooling total capacity	kW	10,36	12,27	13,90	13,66	16,62	18,00
Cooling sensible capacity	kW	7,79	9,53	11,13	10,39	13,19	14,58
Heating capacity	kW	8,06	9,48	10,75	10,53	12,67	13,77
Fan Power input	W	110	253	530	168	384	695

MODEL		MTL-ECM 13+2			MTL-ECM 23+2			MTL-ECM 33+2		
Speed		4,5 MIN	7 MED	9 MAX	4 MIN	6 MED	8 MAX	4,5 MIN	6,5 MED	8 MAX
Air flow	m³/h	721	993	1199	887	1295	1690	1307	1850	2267
Available pressure	Pa	23	50	69	21	50	82	22	50	72
Cooling total capacity	kW	3,40	4,24	4,75	4,54	5,82	6,80	6,39	7,94	8,99
Cooling sensible capacity	kW	2,62	3,35	3,80	3,41	4,42	5,24	4,79	6,11	7,10
Heating capacity	kW	6,92	8,76	10,00	8,81	11,68	14,07	12,30	15,80	18,14
Fan Power input	W	40	87	144	47	116	234	81	205	348

MODEL		MTL-ECM 43+2			MTL-ECM 53+2		
Speed		5,5 MIN	7,5 MED	10 MAX	3 MIN	5 MED	7 MAX
Air flow	m³/h	1755	2329	2942	2416	3304	3857
Available pressure	Pa	25	50	77	26	50	68
Cooling total capacity	kW	8,54	10,22	11,60	11,9	14,46	15,79
Cooling sensible capacity	kW	6,40	7,76	8,93	9,3	11,42	12,63
Heating capacity	kW	16,80	20,63	24,18	22,53	28,16	31,26
Fan Power input	W	115	264	549	165	383	605

MODEL		MTL-ECM 14+2			MTL-ECM 24+2			MTL-ECM 34+2		
Speed		4,5 MIN	7 MED	9 MAX	4 MIN	6 MED	8 MAX	4,5 MIN	6,5 MED	8 MAX
Air flow	m³/h	676	942	1146	869	1267	1641	1273	1804	2208
Available pressure	Pa	23	50	69	21	50	82	22	50	72
Cooling total capacity	kW	3,92	4,79	5,30	5,20	6,59	7,63	7,53	9,30	10,38
Cooling sensible capacity	kW	3,05	3,89	4,41	3,89	5,14	6,16	5,66	7,28	8,35
Heating capacity	kW	6,59	8,43	9,67	8,67	11,48	13,77	12,05	15,50	17,79
Fan Power input	W	41	91	148	45	118	232	82	206	350

MODEL		MTL-ECM 44+2			MTL-ECM 54+2			MTL-ECM 64+2		
Speed		5,5 MIN	7,5 MED	10 MAX	3 MIN	5 MED	7 MAX	3 MIN	6 MED	9 MAX
Air flow	m³/h	1726	2291	2893	2380	3300	3860	2790	4235	5140
Available pressure	Pa	25	50	77	26	50	68	21	50	73
Cooling total capacity	kW	10,05	11.90	13,48	13,66	16,62	18,00	16,77	21,71	24,10
Cooling sensible capacity	kW	7,56	9,24	10,80	10,4	13,2	14,58	12,72	17,6	20,1
Heating capacity	kW	16,59	20,38	23,87	22,32	27,85	30,81	23,20	30,58	34,54
Fan Power input	W	113	261	546	168	384	600	110	343	661

MODEL		MTL-ECM 66+2		
Speed		3 MIN	6 MED	9 MAX
Air flow	m³/h	2750	4190	5090
Available pressure	Pa	22	50	74
Cooling total capacity	kW	20,08	26,91	30,34
Cooling sensible capacity	kW	19,8	20,13	23,20
Heating capacity	kW	22,98	30,38	34,35
Fan Power input	W	115	352	678

Fan Coils are sold in cardboard boxes placed on wood pallets and wrapped in plastic film. The following table shows the conversion factors to determine the weight of the of the various fan coil models compared to the representative model MTL-ECM 14+1.

MODEL	DIMENSIONS	UNPACKED UNIT	PACKED UNIT	UNPACKED UNIT	PACKED UNIT
	mm	WEIGHT (kg)		CONVERSION FACTORS	
MTL-ECM 13	1133x698x310	45	48	0,90	0,91
MTL-ECM 23	1133x698x310	46	49	0,92	0,92
MTL-ECM 33	1133x698x360	54	57	1,10	1,08
MTL-ECM 43	1445x853x360	75	79	1,50	1,49
MTL-ECM 53	1445x853x435	85	89	1,70	1,68
MTL-ECM 14	1133x698x310	47	50	0,94	0,94
MTL-ECM 24	1133x698x310	48	51	0,96	0,96
MTL-ECM 34	1133x698x360	56	59	1,12	1,11
MTL-ECM 44	1445x853x360	78	82	1,56	1,55
MTL-ECM 54	1445x853x435	88	92	1,76	1,74
MTL-ECM 64	1535x1100x488	124	127	2,48	2,40
MTL-ECM 66	1535x1100x488	130	133	2,6	2,51
MTL-ECM 13+1	1133x698x310	48	51	0,96	0,96
MTL-ECM 23+1	1133x698x310	50	53	1,00	1.00
MTL-ECM 33+1	1133x698x360	58	61	1,16	1,15
MTL-ECM 43+1	1445x853x360	80	84	1,60	1,58
MTL-ECM 53+1	1445x853x435	90	94	1,80	1,77
MTL-ECM 14+1	**1133x698x310**	**50**	**53**	**1,00**	**1,00**
MTL-ECM 24+1	1133x698x310	51	54	1,02	1,02
MTL-ECM 34+1	1133x698x360	60	63	1,20	1,19
MTL-ECM 44+1	1445x853x360	83	87	1,66	1,64
MTL-ECM 54+1	1445x853x435	94	98	1,88	1,85
MTL-ECM 13+2	1133x698x310	50	53	1,00	1,00
MTL-ECM 23+2	1133x698x310	52	55	1,04	1,04
MTL-ECM 33+2	1133x698x360	60	63	1,20	1,19
MTL-ECM 43+2	1445x853x360	83	87	1,66	1,64
MTL-ECM 53+2	1445x853x435	94	98	1,88	1,85
MTL-ECM 14+2	1133x698x310	51	54	1,02	1,02
MTL-ECM 24+2	1133x698x310	53	56	1,06	1,06
MTL-ECM 34+2	1133x698x360	62	65	1,24	1,23
MTL-ECM 44+2	1445x853x360	86	90	1,72	1,70
MTL-ECM 54+2	1445x853x435	98	102	1,96	1,92
MTL-ECM 64+2	1535x1100x488	134	137	2,68	2,58
MTL-ECM 66+2	1535x1100x488	140	143	2,80	2,70

Content information

The ranges of products from Sabiana Spa comply with the requirements of the "RoHS" Directive (EU) 2015/863 of 31 March 2015 and 2011/65/EU of 8 June 2011.
Sabiana S.p.A fulfils the requirements of “Regulation (EC) No 1907/2006 - Registration, Evaluation, Authorisation and Restriction Chemicals (REACH)”. Detailed declaration of the SVHC substances that may be present above a concentration of 0.1% (w/w) in the individual articles is available.

Product components (unit)	Weight, kg	Pre-consumer material, weight-%	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Sheet metal (steel)	27,9828	0	0	0
Steel	7,1858	0	0	0
Copper	4,4980	0,71	19,29	0
Alluminium	3,3268	4,19	15,70	0
ABS	2,6145	0	0	0
PE	0,6214	0	0	0
Miscellaneous	0,2200	0	0	0
Brass	0,1763	0	0	0
Rubber	0,1733	0	0	0
PVC	0,1668	0	0	0
Other plastics	0,1485	0	0	0
Electroni components	0,1200	0	0	0
Nylon	0,0540	0	0	0
TOTAL	**47,2882**	**0,36**	**2,94**	**0**
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**		**Weight biogenic carbon, kg C/kg**
Cardboard	2,9200	6,18%		4,8180
Wood (pallet)	1,7200	3,64%		3,1533
LDPE	0,1800	0,38%		0
EPS	0,1166	0,25%		0
Paper	0,0160	0,03%		0,0264
HDPE	0,0100	0,02%		0
Adhesive paper	0,0020	0,004%		0,0033
Adhesive plastic	0,0010	0,002%		0
TOTAL	**4,9656**	10,50%		**8,001**

Data referred to a single unit of the representative product Maestro MTL-ECM 14+1.

LCA information

Methodology: The quantification of the environmental performance was carried out in accordance with the Life Cycle Assessment (LCA - Life Cycle Assessment) methodology regulated by the ISO 14040, ISO 14044 and ISO 14025 standards and following the specific product requirements PCR 2019: 14 Construction Products Version 2.0.1 and c-PCR 027 Fan coils.
The LCA methodology allows you to determine the environmental impacts of a product or service in terms of resource consumption and emissions into the environment, as well as waste production, from a life cycle perspective.

Functional unit: The functional unit is 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode by a heating/cooling equipment using small scale HVAC as defined in CPC 43912 and HS 8415.83 and, specifically, using a Hydronic Fan Coil Unit as defined into EN1397. The environmental impacts are given per functional unit.

Reference service life: The lifetime for fan coil is considered to be 20 years.

Time representativeness: The LCA study is conducted in 2026 with data relating to 2025.

Database and LCA software: The Ecoinvent database v.3.10 (www.ecoinvent.org) provides the life cycle inventory data for the raw and process materials obtained from the background system. LCA software used is SimaPro 10.5.0.3.

Cut-off rules: 1% cut-off is applied. According to PCR 2019:14 v.2.0.1, data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts have been included, and also a 95% of total inflows (mass and energy) per life-cycle stages have been included.

Data quality: Primary data are used for electricity and average distances and means of transport in modules A1-A3.
Secondary data derived from the Ecoinvent v.3.10 database is used for the following phases: production of raw materials, fuels and water consumption. Data quality assessment is compliant with Annex E of EN 15804:2012+A2:2019, taking into account geographical, technological and temporal representativeness.

Allocation rules: No allocation was made in the A1-A2 modules. The materials and weights were extracted from the BoM. For each material, the type of packaging with which it arrives at the Sabiana plant has been identified and the amount of packaging allocated to the individual material has been calculated. Raw material transports were calculated based on manufacturer/supplier distances. For module A4 an allocation was made based on the number of pieces to determine the specific consumes of a fan coil. In particular, in the Sabiana 1 plant, where the production of the batteries takes place (fan coil component), where possible, we tried to avoid allocation otherwise the total consumption of the battery department was allocated by number of batteries produced. In the Sabiana 2, Sabiana 3 and Sabiana 4 plants, all consumption and outputs were allocated on the basis of the parts produced and the pieces handled respectively.

Environmental impact method: EN 15804 + A2 based on EF 3.1 characterisation factors (JRC Website)

Description of the system boundaries: Cradle to grave and module D (A + B + C + D).

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage			Use stage							End of life stage			Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	ND	X	X	X	ND	X	ND	X	X	X	X	X
Geography	GLO	GLO	IT	EU	EU	-	EU	EU	EU	-	EU	-	EU	EU	EU	EU	EU
Primary data used	17,60% (see table below)			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	-65%/+4%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

X=Declared module, ND= Non declared, EU=European, GLO=Global, IT=Italy. For module B. only B2 and B6 are applicable for fan coils usage (according to c-PCR-027 Fan coils).

The following table shows the range of variability for each module and for each category of impact. These values are required by PCR 2019:14 v.2.0.1 for EPD of multiple products with variances greater than 10%.

Module	A1-A3	A4, A5	B6	C.D
GWP-GWP	-65%/+4%	-62%/+3%	-42%/+37%	-62%/+3%
GWP-total	-65%/+4%	-62%/+3%	-42%/+37%	-62%/+3%
ODP	-70%/+5%	-62%/+3%	-42%/+37%	-62%/+3%
AP	-62%/+3%	-62%/+3%	-42%/+37%	-62%/+3%
EP-freshwater	-62%/+3%	-62%/+3%	-42%/+37%	-62%/+3%
EP-marine	-63%/+3%	-62%/+3%	-42%/+37%	-62%/+3%
EP-terrestrial	-63%/+3%	-62%/+3%	-42%/+37%	-62%/+3%
POCP	-64%/+3%	-62%/+3%	-42%/+37%	-62%/+3%
ADP-minerals&metals	-62%/+3%	-62%/+3%	-42%/+37%	-62%/+3%
ADP-fossil	-63%/+3%	-62%/+3%	-42%/+37%	-62%/+3%
WDP	-62%/+3%	-62%/+3%	-42%/+37%	-62%/+3%

The following table shows the details of the determination of primary data. According to PCR, *the declaration of share of primary data is required* only for the total GWP-GHG results of modules A1-A3.

Process name	Source Type	Source	Reference year	Data category	Share of primary data, of GWP GHG results for A1 A3
(A2) Transport of raw materials to manufactoring site	Database	Ecoinvent 3.10	2025	Primary data	1,06%
(A3) Manufactory of product	Database	Ecoinvent 3.10	2024	Primary data	16,55%
Total share of primary data, of GWP GHG results for A1-A3					**17,60%**

Process name	Geographical Representativeness	Temporal Representativeness	Technological Representativeness
(A2) Transport of raw materials to manufactoring site	Good (Database are selected based on the geographical representativeness of the suppliers)	Very Good (all the processes considered are under validity)	Good
(A3) Manufactory of product	Good (Database are selected based on the geographical representativeness of the suppliers)	Very Good (all the processes considered are under validity)	Good

Life Cycle Stages

A1, raw material supply. This includes the extraction and processing of all raw materials and energy which occur upstream from the manufacturing process.

A2, transport to the manufacturer. The raw materials are transported to the manufacturing site. The modelling includes road and boat transportations of each raw material. For each component/material, the distance from the production country to the Sabiana plant has been calculated. For non-European materials, the transportation from the production plants to the port of origin has been deemed irrelevant compared to the distance that the product needs to travel by ship. For the components/materials coming from countries outside Europe but unknown, a distance on ship of 10000 km and a distance of 165 km on road (from the port of Genoa to Sabiana) have been assumed.

A3, manufacturing. This module includes the manufacture/assembling of product at the Sabiana' plants and the manufacture of packaging. The production of packaging material is taken into account at this stage. The processing of any waste arising from this stage is also included. The 1,18% of the electricity used for the production of the Maestro MTL ECM 14+1 fan coil at Sabiana plants is self-produced by photovoltaic panels (0,0725 kg CO_2eq/ kWh). The remaining amount of electricity is supplied by the national grid. The electrical mix used to model the electrical consumption at medium voltage is based on the Italian Residual Mix 2025 (Source: AIB, "European Residual Mixes -Results of the calculation of Residual Mixes for the calendar year 2025", 0,74 kg CO_2eq/ kWh). Total electricity mix is evaluated as 0,6631 kg CO_2eq/ kWh.
The end-of-life scenario for raw material packaging was modelled according to CONAI 2024 data (Italian Packaging Consortium).

A4, transport to the building site. This module includes transport from the production gate to the installation site. The average distribution distance is calculated based on the sales of the product Maestro MTL-ECM in the year 2025. Specifically, the following distribution is considered: 46,18% of the product is sold in Italy, 52,24% in other European countries (it was considered the specific distance for each state) and 0,96% in Morocco. Shipments to Italy and Europe took place by truck, with some distances also covered by train (for the United Kingdom) and by ship (to Sicily and Morocco).

A5, installation into the building. This module includes all material and energy inputs and outputs required for the installation of the fan coil. The installation starts manually without the use of energy. Specifically, this module includes the end of life of the product packaging and the consumption of water for battery recharge. The end-of-life scenario for packaging was modelled for a European scenario according to Eurostat scenarios for packaging waste (2023). The Moroccan scenario was excluded as per cut-off rules.

B1, use. This module includes the use of the installed product in terms of any emissions released into the environment during its lifetime (not covered by B2-B7). According to the PCR, this module is not declared as it is not relevant for the product.

B2, maintenance, B3, repair, B4, replacement. As indicated by the manufacturer, no maintenance, repair, replacement action is required during the lifetime of 20 years. Any exceptional events are not considered in this study.

B5, refurbishment. According to the PCR, this module is not declared as it is not relevant for the product.

B6, operational energy use. This module includes the energy consumption from the operation of the fan coil unit. The total electrical energy consumption along FCU lifetime has been calculated according to the Technical Certification Rules Of The Eurovent Certified Performance Mark with the following hypotheses:

- 1100 hours in summer 65% (LS) 30% (MS) 5% (HS)
- 1500 hours in winter 70% (LS) 25% (MS) 5% (HS)
-

where:
LS=Low Speed
MS=Medium Speed
HS=High Speed

An average European electric mix (*Electricity, low voltage {RER}| market group for electricity, low voltage | Cut-off, U,* 0,303 kg CO_2eq/ kWh), was considered in the modelling as the product is mainly sold in Europe and the sales distribution from country to country varies significantly from year to year. In the "Additional environmental information" section, the B6 module is reported for different scenarios.

B7, operational water use. This module includes water consumption during the use phase. According to the PCR, this module is not declared as it is not relevant for the product.

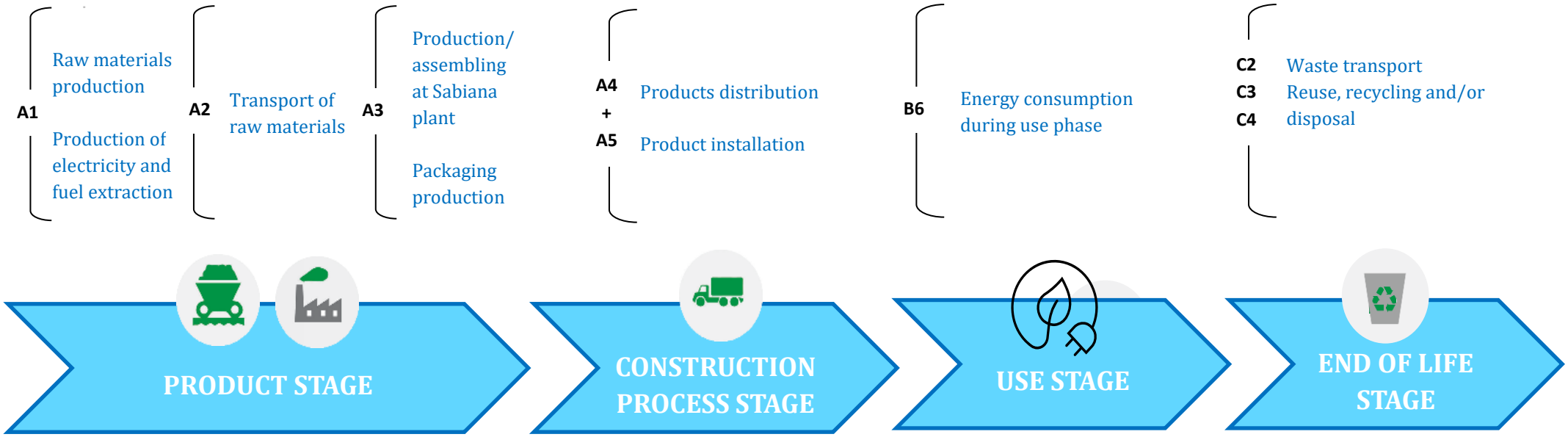
C1, de-construction. This stage includes the impacts during the dismantling of the MTL-ECM fan coil from the building. It is assumed that no energy and additional material are needed for the dismantling of the product. This module has a contribution of 0 to all environmental indicators.

C2, waste transport. This stage includes the transportation of discarded products to the waste processing/disposal area. 50 km distance by trucks is assumed.

C3, waste processing. This module includes the collection of waste fractions from the deconstruction and waste processing of material flows intended for reuse, recycling and energy recovery. For Europe, it is assumed a material recycling rate of 50% according to PCR Part A for Building-Related Products and Services v.4 of UL Environment framework.

C4, waste disposal. Waste disposal including physical pre-treatment and management of the disposal site. According to PCR Part A for Building-Related Products and Services v.4 of UL Environment framework, for Europe it is assumes the following scenario: a 37% in landfill and 13% in incineration. No energy recovery is considered.

D, reuse, recycling and energy recovery potentials. Materials that are recycled are assumed to substitute the use of virgin metals. Benefits of heat recovery from the incineration are excluded.


A1
Raw materials production
Production of electricity and fuel extraction
A2
Transport of raw materials
A3
Production/ assembling at Sabiana plant
Packaging production
A4
+
A5
Products distribution
Product installation
B6
Energy consumption during use phase
C2
C3
C4
Waste transport
Reuse, recycling and/or disposal
PRODUCT STAGE
CONSTRUCTION PROCESS STAGE
USE STAGE
END OF LIFE STAGE

ENVIRONMENTAL PERFORMANCE

LCA results of the product - main environmental performance results[2]
Mandatory impact category indicators according to EN 15804

Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model)													
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B2**	**B3**	**B4**	**B6**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-fossil	kg CO_2 eq.	1,12E-03	2,97E-05	1,58E-06	0	0	0	4,42E-03	0	2,26E-06	3,06E-07	7,11E-06	-2,41E-04
GWP-biogenic	kg CO_2 eq.	-1,22E-05	9,75E-09	2,64E-05	0	0	0	1,74E-04	0	7,34E-10	7,25E-11	3,68E-07	1,94E-05
GWP-luluc	kg CO_2 eq.	2,89E-06	7,31E-10	2,31E-11	0	0	0	1,40E-05	0	5,50E-11	7,63E-12	7,26E-11	-9,83E-07
GWP-total	kg CO_2 eq.	1,11E-03	2,98E-05	2,80E-05	0	0	0	4,61E-03	0	2,26E-06	3,06E-07	7,48E-06	-2,22E-04
ODP	kg CFC 11 eq.	1,94E-11	6,06E-13	6,91E-15	0	0	0	6,97E-11	0	4,57E-14	1,90E-16	1,65E-14	-2,84E-12
AP	mol H^+ eq.	1,55E-05	7,48E-08	1,64E-09	0	0	0	2,21E-05	0	5,42E-09	1,05E-10	6,34E-09	-4,83E-06
EP-freshwater	kg P eq.	8,78E-08	2,49E-11	1,12E-12	0	0	0	4,31E-07	0	1,88E-12	2,74E-13	5,74E-12	-2,65E-08
EP-marine	kg N eq.	1,33E-06	2,86E-08	8,06E-10	0	0	0	2,86E-06	0	2,05E-09	4,71E-11	3,28E-09	-3,43E-07
EP-terrestrial	mol N eq.	1,68E-05	3,13E-07	7,78E-09	0	0	0	3,22E-05	0	2,25E-08	4,79E-10	2,98E-08	-4,45E-06
POCP	kg NMVOC eq.	5,79E-06	1,30E-07	2,51E-09	0	0	0	1,07E-05	0	9,50E-09	1,24E-10	9,11E-09	-1,45E-06
ADP-minerals&metals*	kg Sb eq.	1,87E-07	9,82E-13	4,46E-14	0	0	0	2,76E-10	0	7,41E-14	3,82E-15	1,53E-13	-5,91E-08
ADP-fossil*	MJ	6,34E-03	4,04E-06	1,51E-07	0	0	0	7,79E-02	0	2,96E-07	4,48E-08	6,81E-07	-1,53E-03
WDP*	m^3 eq	4,60E-04	1,67E-07	7,23E-07	0	0	0	1,16E-03	0	1,26E-08	1,01E-08	-1,10E-06	-1,13E-04
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption												

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

[2] The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3)

Additional mandatory and voluntary impact category indicators

Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model)													
Indicator	Unit	A1-A3	A4	A5	B2	B3	B4	B6	C1	C2	C3	C4	D
GWP-GHG[3]	kg CO_2 eq.	1,13E-03	2,98E-05	1,75E-06	0	0	0	4,44E-03	0	2,26E-06	3,06E-07	7,12E-06	-2,42E-04

Resource use indicators

Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model)													
Indicator	Unit	A1-A3	A4	A5	B2	B3	B4	B6	C1	C2	C3	C4	D
PERE**	MJ	1,68E-03	1,23E-06	5,31E-08	0	0	0	2,63E-02	0	9,18E-08	7,63E-09	3,54E-07	-3,94E-04
PERM**	MJ	5,56E-04	1,72E-07	-2,37E-04	0	0	0	3,50E-03	0	1,29E-08	1,24E-09	9,91E-08	-3,67E-04
PERT**	MJ	2,24E-03	1,40E-06	-2,37E-04	0	0	0	2,98E-02	0	1,05E-07	8,86E-09	4,53E-07	-7,61E-04
PENRE	MJ	6,29E-03	4,04E-06	1,51E-07	0	0	0	7,78E-02	0	2,96E-07	4,48E-08	6,81E-07	-1,50E-03
PENRM	MJ	5,66E-05	1,69E-12	1,33E-11	0	0	0	6,40E-09	0	1,28E-13	1,70E-13	1,30E-11	-2,79E-05
PENRT	MJ	6,34E-03	4,04E-06	1,51E-07	0	0	0	7,78E-02	0	2,96E-07	4,48E-08	6,81E-07	-1,53E-03
SM	kg	5,90E-05	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	1,44E-05	1,01E-08	6,50E-09	0	0	0	8,95E-05	0	7,59E-10	4,76E-10	-6,64E-08	-3,66E-06
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water												

*** The indicators PERE, PERM and PERT were calculated according to method B of the Annex 3 (PCR 2019:14 v.2.0.1)*

[3] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Waste indicators

Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model)													
Indicator	Unit	A1-A3	A4	A5	B2	B3	B5	B6	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2,52E-06	2,89E-09	5,46E-08	0	0	0	2,74E-06	0	2,18E-10	6,20E-09	1,88E-05	-1,19E-07
Non-hazardous waste disposed	kg	1,85E-05	1,20E-08	3,84E-06	0	0	0	6,17E-05	0	9,02E-10	1,41E-07	1,03E-04	-4,18E-06
Radioactive waste disposed	kg	1,99E-08	3,85E-11	1,31E-12	0	0	0	7,85E-07	0	2,78E-12	1,77E-13	5,52E-12	-3,94E-09

Output flow indicators

Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model)													
Indicator	Unit	A1-A3	A4	A5	B2	B3	B5	B6	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	6,52E-05	0	5,14E-05	0	0	0	0	0	0	3,65E-04	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0

Additional Environmental Information

Different scenarios for module B6

The following tables show different scenarios for module B6. Specifically, the results are reported for the B6 module depending on the European country in which the MTL-ECM 14+1 is used for all its RSL.

Module B6: Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model)														
Indicator	**Unit**	**Albania**	**Austria**	**Belgium**	**Bulgaria**	**Croatia**	**Estonia**	**Finland**	**France**	**Germany**	**Greece**	**Ireland**	**Italy**	**Norway**
GWP - total	kg CO_2 eq.	0,21	0,69	0,58	1,53	1,31	1,12	0,44	0,23	1,26	1,86	1,07	1,12	0,03
GWP-GWP	kg CO_2 eq.	0,22	0,67	0,59	1,58	1,30	1,14	0,45	0,23	1,18	1,91	1,09	1,07	0,03
ODP	kg CFC 11 eq.	0,13	0,93	1,52	0,43	1,26	1,10	0,40	0,46	0,68	3,31	4,59	1,41	0,01
AP	mol H^+ eq.	0,43	0,32	0,15	2,18	2,96	1,61	0,28	0,16	0,43	1,90	0,54	0,69	0,01
EP-freshwater	kg P eq.	0,40	0,74	0,06	3,62	1,63	0,17	0,14	0,03	1,79	2,86	0,07	0,19	0,00
EP-marine	kg N eq.	0,20	0,48	0,40	1,55	1,65	2,30	0,44	0,30	0,67	1,30	0,81	0,83	0,01
EP-terrestrial	mol N eq.	0,20	0,50	0,41	1,48	1,62	2,28	0,49	0,27	0,69	1,26	0,80	0,84	0,01
POCP	kg NMVOC eq.	0,21	0,53	0,39	1,44	1,72	2,29	0,43	0,29	0,67	1,73	0,80	1,17	0,01
ADP-minerals&metals	kg Sb eq.	0,09	0,38	1,06	1,82	0,82	0,67	1,09	1,93	0,80	0,67	0,15	0,25	0,02
ADP-fossil	MJ	0,08	0,76	0,99	1,95	0,61	0,65	0,89	1,74	1,10	0,48	0,14	0,25	0,02
WDP	m^3 eq	-3,41	0,33	0,85	1,52	1,67	0,71	0,92	0,34	0,14	1,99	0,50	2,99	0,25

	Module B6: Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model)												
Indicator	**Unit**	**Lithuania**	**Netherlands**	**Poland**	**Portugal**	**United Kingdom**	**Czech Republic**	**Russia**	**Serbia**	**Spain**	**Switzerland**	**Sweden**	**Hungary**
GWP - total	kg CO_2 eq.	1,21	1,13	2,91	0,79	0,75	1,97	2,25	3,41	0,58	0,10	0,07	1,11
GWP-GWP	kg CO_2 eq.	1,20	1,16	2,99	0,82	0,78	2,02	2,34	3,54	0,60	0,05	0,07	1,14
ODP	kg CFC 11 eq.	1,58	2,41	0,71	1,06	2,41	0,71	0,98	0,19	0,62	0,08	0,03	1,57
AP	mol H^+ eq.	0,83	0,33	4,25	0,74	0,37	1,59	1,98	10,80	0,47	0,03	0,04	1,11
EP-freshwater	kg P eq.	0,24	0,32	4,03	0,14	0,09	3,32	1,48	9,59	0,08	0,00	0,02	1,26
EP-marine	kg N eq.	1,44	0,78	3,56	0,86	0,81	1,89	2,08	3,80	0,75	0,06	0,11	1,12
EP-terrestrial	mol N eq.	1,43	0,83	3,55	0,88	0,89	1,85	2,03	3,67	0,74	0,07	0,12	1,13
POCP	kg NMVOC eq.	1,73	0,78	3,08	1,05	0,72	1,61	2,62	3,93	0,82	0,06	0,08	1,22
ADP-minerals&metals	kg Sb eq.	0,34	0,32	1,70	0,24	0,66	1,75	1,17	2,03	0,81	0,50	0,79	1,43
ADP-fossil	MJ	0,36	0,33	1,01	0,21	0,64	4,63	0,71	0,61	0,74	0,45	0,70	1,63
WDP	m^3 eq	0,74	0,58	1,52	2,32	0,10	1,28	2,23	1,80	2,41		0,25	0,71

GWP-GHG results of the “Best-Case Product”

The following table shows the GWP-GHG indicator for the MTL-ECM 53+2 model, the best-case product.

Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (MTL-ECM 53+2, best-case product)													
Indicator	Unit	A1-A3	A4	A5	B2	B3	B5	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	3,97E-04	5,11E-06	6,58E-07	0	0	0	3,83E-03	0	8,53E-07	1,15E-07	2,68E-06	-9,13E-05

GWP-GHG results of the “Worst-Case Product”

The following table shows the GWP- GHG indicator for the MTL-ECM 13+1 model, the worst-case product.

Results referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (MTL-ECM 13+1, best-case product)													
Indicator	Unit	A1-A3	A4	A5	B2	B3	B4	B6	C1	C2	C3	C4	D
GWP-GHG	kg CO_2 eq.	1,17E-03	1,40E-05	1,80E-06	0	0	0	4,76E-03	0	2,33E-06	3,15E-07	7,33E-06	-2,49E-04

Different scenarios for module C1-C4 and D

Below, as indicated by the PCR, are the impacts associated with different waste management scenarios: 100% landfilling, 100% recycling, and 100% incineration. Results are referred to 1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode (CSS-ECM 23, representative model).

100% recycling

Indicator	Unit	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	0	2,26E-06	6,11E-07	0	-6,44E-04
GWP-biogenic	kg CO_2 eq.	0	7,34E-10	6,11E-07	0	-6,44E-04
GWP-luluc	kg CO_2 eq.	0	5,50E-11	1,53E-11	0	-2,52E-06
GWP-total	kg CO_2 eq.	0	2,26E-06	1,22E-06	0	-1,29E-03
ODP	kg CFC 11 eq.	0	4,57E-14	3,80E-16	0	-6,48E-04
AP	mol H^+ eq.	0	5,42E-09	2,10E-10	0	-6,56E-12
EP-freshwater	kg P eq.	0	1,88E-12	5,49E-13	0	-1,28E-05
EP-marine	kg N eq.	0	2,05E-09	9,42E-11	0	-6,87E-08
EP-terrestrial	mol N eq.	0	2,25E-08	9,58E-10	0	-9,03E-07
POCP	kg NMVOC eq.	0	9,50E-09	2,48E-10	0	-1,18E-05
ADP-minerals&metals	kg Sb eq.	0	7,41E-14	7,63E-15	0	-3,77E-06
ADP-fossil*	MJ	0	2,96E-07	8,97E-08	0	-1,51E-07
WDP*	m^3 eq	0	1,26E-08	2,02E-08	0	-4,25E-03
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption					

Indicator	Unit	C1	C2	C3	C4	D
GWP-GHG[4]	kg CO_2 eq.	0	2,26E-06	6,11E-07	0	-6,48E-04

[4] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Indicator	Unit	C1	C2	C3	C4	D
PERE**	MJ	0	9,18E-08	1,53E-08	0	-1,10E-03
PERM**	MJ	0	1,29E-08	2,47E-09	0	-4,09E-04
PERT**	MJ	0	1,05E-07	1,77E-08	0	-1,51E-03
PENRE	MJ	0	2,96E-07	8,97E-08	0	-4,25E-03
PENRM	MJ	0	1,28E-13	4,28E-13	0	-2,75E-07
PENRT	MJ	0	2,96E-07	8,97E-08	0	-4,25E-03
SM	kg	0	0	0	0	0
RSF	MJ	0	0	0	0	0
NRSF	MJ	0	0	0	0	0
FW	m^3	0	7,59E-10	9,53E-10	0	-9,51E-06
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

Indicator	Unit	C1	C2	C3	C4	D
Hazardous waste disposed	kg	0	2,18E-10	1,24E-08	0	-2,42E-07
Non-hazardous waste disposed	kg	0	9,02E-10	2,82E-07	0	-1,19E-05
Radioactive waste disposed	kg	0	2,78E-12	3,53E-13	0	-1,04E-08

Indicator	Unit	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0
Material for recycling	kg	0	0	2,29E-04	0	0
Materials for energy recovery	kg	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0

100% incineration

Indicator	Unit	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	0	2,26E-06	0	4,51E-05	1,63E-04
GWP-biogenic	kg CO_2 eq.	0	7,34E-10	0	2,74E-06	2,13E-05
GWP-luluc	kg CO_2 eq.	0	5,50E-11	0	2,32E-10	5,56E-07
GWP-total	kg CO_2 eq.	0	2,26E-06	0	4,79E-05	1,85E-04
ODP	kg CFC 11 eq.	0	4,57E-14	0	4,90E-14	8,83E-13
AP	mol H^+ eq.	0	5,42E-09	0	2,26E-08	3,13E-06
EP-freshwater	kg P eq.	0	1,88E-12	0	1,55E-11	1,57E-08
EP-marine	kg N eq.	0	2,05E-09	0	1,08E-08	2,16E-07
EP-terrestrial	mol N eq.	0	2,25E-08	0	1,16E-07	2,86E-06
POCP	kg NMVOC eq.	0	9,50E-09	0	3,18E-08	8,74E-07
ADP-minerals&metals	kg Sb eq.	0	7,41E-14	0	4,57E-13	3,29E-08
ADP-fossil*	MJ	0	2,96E-07	0	1,64E-06	1,19E-03
WDP*	m^3 eq	0	1,26E-08	0	3,64E-07	6,21E-05
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption					

Indicator	Unit	C1	C2	C3	C4	D
GWP-GHG[5]	kg CO_2 eq.	0	2,26E-06	0	4,51E-05	1,64E-04

[5] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Indicator	Unit	C1	C2	C3	C4	D
PERE**	MJ	0	9,18E-08	0	6,61E-07	3,16E-04
PERM**	MJ	0	1,29E-08	0	2,12E-07	-3,25E-04
PERT**	MJ	0	1,05E-07	0	8,73E-07	-9,76E-06
PENRE	MJ	0	2,96E-07	0	1,64E-06	1,19E-03
PENRM	MJ	0	1,28E-13	0	9,74E-11	2,21E-09
PENRT	MJ	0	2,96E-07	0	1,64E-06	1,19E-03
SM	kg	0	0	0	0	0
RSF	MJ	0	0	0	0	0
NRSF	MJ	0	0	0	0	0
FW	m^3	0	7,59E-10	0	1,00E-07	2,19E-06
Acronyms		PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water				

Indicator	Unit	C1	C2	C3	C4	D
Hazardous waste disposed	kg	0	2,18E-10	0	1,44E-04	3,62E-09
Non-hazardous waste disposed	kg	0	9,02E-10	0	1,44E-04	3,56E-06
Radioactive waste disposed	kg	0	2,78E-12	0	1,27E-11	2,48E-09

Indicator	Unit	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0

100% disposal

Indicator	Unit	C1	C2	C3	C4	D
GWP-fossil	kg CO_2 eq.	0	2,26E-06	0	3,16E-06	1,63E-04
GWP-biogenic	kg CO_2 eq.	0	7,34E-10	0	2,99E-08	2,13E-05
GWP-luluc	kg CO_2 eq.	0	5,50E-11	0	1,09E-10	5,56E-07
GWP-total	kg CO_2 eq.	0	2,26E-06	0	3,19E-06	1,85E-04
ODP	kg CFC 11 eq.	0	4,57E-14	0	2,73E-14	8,83E-13
AP	mol H^+ eq.	0	5,42E-09	0	9,12E-09	3,13E-06
EP-freshwater	kg P eq.	0	1,88E-12	0	9,87E-12	1,57E-08
EP-marine	kg N eq.	0	2,05E-09	0	5,04E-09	2,16E-07
EP-terrestrial	mol N eq.	0	2,25E-08	0	3,96E-08	2,86E-06
POCP	kg NMVOC eq.	0	9,50E-09	0	1,34E-08	8,74E-07
ADP-fossil*	MJ	0	7,41E-14	0	2,50E-13	3,29E-08
WDP*	m^3 eq	0	2,96E-07	0	3,16E-06	1,63E-04
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption					

Indicator	Unit	C1	C2	C3	C4	D
GWP-GHG[6]	kg CO_2 eq.	0	2,26E-06	0	3,17E-06	1,64E-04

[6] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Indicator	Unit	C1	C2	C3	C4	D
PERE**	MJ	0	9,18E-08	0	7,19E-07	3,16E-04
PERM**	MJ	0	1,29E-08	0	1,93E-07	-3,25E-04
PERT**	MJ	0	1,05E-07	0	9,11E-07	-9,76E-06
PENRE	MJ	0	2,96E-07	0	9,08E-07	-1,73E-04
PENRM	MJ	0	1,28E-13	0	8,05E-12	2,21E-09
PENRT	MJ	0	2,96E-07	0	9,08E-07	-1,73E-04
SM	kg	0	0	0	0	0
RSF	MJ	0	0	0	0	0
NRSF	MJ	0	0	0	0	0
FW	m^3	0	7,59E-10	0	-2,15E-07	2,19E-06
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

Indicator	Unit	C1	C2	C3	C4	D
Hazardous waste disposed	kg	0	2,18E-10	0	3,53E-07	3,62E-09
Non-hazardous waste disposed	kg	0	9,02E-10	0	2,29E-04	3,56E-06
Radioactive waste disposed	kg	0	2,78E-12	0	1,04E-11	2,48E-09

Indicator	Unit	C1	C2	C3	C4	D
Components for re-use	kg	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0

Conversion factors

Conversion coefficients are given for the environmental impact of the functional unit, **1 kWh of thermal energy exchanged with the air of the room in cooling and/or heating mode**. For each module of the life cycle, the environmental impacts of the product concerned are calculated by multiplying the impacts of the declaration corresponding to the reference product by the conversion coefficient. The "Total" column should be calculated by adding the environmental impacts of each stage of the life cycle.

Indicator	MTL-ECM 13								MTL-ECM 23								MTL-ECM 33							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,80	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,66	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,55	0,55	0,55	1,09	0,55	0,55	0,55	0,55
ODP	0,83	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,68	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,53	0,55	0,55	1,09	0,55	0,55	0,55	0,55
AP	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,66	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,56	0,55	0,55	1,09	0,55	0,55	0,55	0,55
EP-freshwater	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,65	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,56	0,55	0,55	1,09	0,55	0,55	0,55	0,55
EP-marine	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,66	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,55	0,55	0,55	1,09	0,55	0,55	0,55	0,55
EP-terrestrial	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,66	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,56	0,55	0,55	1,09	0,55	0,55	0,55	0,55
POCP	0,80	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,66	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,55	0,55	0,55	1,09	0,55	0,55	0,55	0,55
ADP-minerals&metals	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,65	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,56	0,55	0,55	1,09	0,55	0,55	0,55	0,55
ADP-fossil	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,66	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,56	0,55	0,55	1,09	0,55	0,55	0,55	0,55
WDP	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,79	0,66	0,65	0,65	0,90	0,65	0,65	0,65	0,65	0,56	0,55	0,55	1,09	0,55	0,55	0,55	0,55

Indicator	MTL-ECM 43								CSS-ECM 53							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,53	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,43	0,45	0,45	1,11	0,45	0,45	0,45	0,45
ODP	0,48	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,37	0,45	0,45	1,11	0,45	0,45	0,45	0,45
AP	0,56	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,46	0,45	0,45	1,11	0,45	0,45	0,45	0,45
EP-freshwater	0,56	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,46	0,45	0,45	1,11	0,45	0,45	0,45	0,45
EP-marine	0,55	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,45	0,45	0,45	1,11	0,45	0,45	0,45	0,45
EP-terrestrial	0,55	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,45	0,45	0,45	1,11	0,45	0,45	0,45	0,45
POCP	0,54	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,44	0,45	0,45	1,11	0,45	0,45	0,45	0,45
ADP-minerals&metals	0,56	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,46	0,45	0,45	1,11	0,45	0,45	0,45	0,45
ADP-fossil	0,55	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,45	0,45	0,45	1,11	0,45	0,45	0,45	0,45
WDP	0,55	0,56	0,56	1,11	0,56	0,56	0,56	0,56	0,45	0,45	0,45	1,11	0,45	0,45	0,45	0,45

Indicator	MTL-ECM 14								MTL-ECM 24								MTL-ECM 34							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,73	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,58	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,48	0,48	0,48	0,93	0,48	0,48	0,48	0,48
ODP	0,74	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,58	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,46	0,48	0,48	0,93	0,48	0,48	0,48	0,48
AP	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,49	0,48	0,48	0,93	0,48	0,48	0,48	0,48
EP-freshwater	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,49	0,48	0,48	0,93	0,48	0,48	0,48	0,48
EP-marine	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,48	0,48	0,48	0,93	0,48	0,48	0,48	0,48
EP-terrestrial	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,49	0,48	0,48	0,93	0,48	0,48	0,48	0,48
POCP	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,48	0,48	0,48	0,93	0,48	0,48	0,48	0,48
ADP-minerals&metals	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,49	0,48	0,48	0,93	0,48	0,48	0,48	0,48
ADP-fossil	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,49	0,48	0,48	0,93	0,48	0,48	0,48	0,48
WDP	0,72	0,72	0,72	0,76	0,72	0,72	0,72	0,72	0,57	0,57	0,57	0,73	0,57	0,57	0,57	0,57	0,49	0,48	0,48	0,93	0,48	0,48	0,48	0,48

Indicator	MTL-ECM 44								MTL-ECM 54								MTL-ECM 64							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,47	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,40	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,44	0,48	0,48	0,66	0,48	0,48	0,48	0,48
ODP	0,42	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,34	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,36	0,48	0,48	0,66	0,48	0,48	0,48	0,48
AP	0,50	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,43	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,49	0,48	0,48	0,66	0,48	0,48	0,48	0,48
EP-freshwater	0,50	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,43	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,49	0,48	0,48	0,66	0,48	0,48	0,48	0,48
EP-marine	0,49	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,42	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,47	0,48	0,48	0,66	0,48	0,48	0,48	0,48
EP-terrestrial	0,49	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,42	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,47	0,48	0,48	0,66	0,48	0,48	0,48	0,48
POCP	0,48	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,41	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,46	0,48	0,48	0,66	0,48	0,48	0,48	0,48
ADP-minerals&metals	0,50	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,43	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,49	0,48	0,48	0,66	0,48	0,48	0,48	0,48
ADP-fossil	0,49	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,42	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,47	0,48	0,48	0,66	0,48	0,48	0,48	0,48
WDP	0,49	0,50	0,50	0,94	0,50	0,50	0,50	0,50	0,42	0,42	0,42	1,05	0,42	0,42	0,42	0,42	0,48	0,48	0,48	0,66	0,48	0,48	0,48	0,48

Indicator	MTL-ECM 66							
	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,40	0,43	0,43	0,58	0,43	0,43	0,43	0,43
ODP	0,32	0,43	0,43	0,58	0,43	0,43	0,43	0,43
AP	0,44	0,43	0,43	0,58	0,43	0,43	0,43	0,43
EP-freshwater	0,44	0,43	0,43	0,58	0,43	0,43	0,43	0,43
EP-marine	0,42	0,43	0,43	0,58	0,43	0,43	0,43	0,43
EP-terrestrial	0,43	0,43	0,43	0,58	0,43	0,43	0,43	0,43
POCP	0,41	0,43	0,43	0,58	0,43	0,43	0,43	0,43
ADP-minerals&metals	0,44	0,43	0,43	0,58	0,43	0,43	0,43	0,43
ADP-fossil	0,43	0,43	0,43	0,58	0,43	0,43	0,43	0,43
WDP	0,43	0,43	0,43	0,58	0,43	0,43	0,43	0,43

Indicator	MTL-ECM 13+1								MTL-ECM 23+1								MTL-ECM 33+1							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	1,04	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,69	0,70	0,70	1,32	0,70	0,70	0,70	0,70
ODP	1,05	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,66	0,70	0,70	1,32	0,70	0,70	0,70	0,70
AP	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,70	0,70	0,70	1,32	0,70	0,70	0,70	0,70
EP-freshwater	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,70	0,70	0,70	1,32	0,70	0,70	0,70	0,70
EP-marine	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,70	0,70	0,70	1,32	0,70	0,70	0,70	0,70
EP-terrestrial	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,70	0,70	0,70	1,32	0,70	0,70	0,70	0,70
POCP	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,69	0,70	0,70	1,32	0,70	0,70	0,70	0,70
ADP-minerals&metals	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,71	0,70	0,70	1,32	0,70	0,70	0,70	0,70
ADP-fossil	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,70	0,70	0,70	1,32	0,70	0,70	0,70	0,70
WDP	1,03	1,03	1,03	1,07	1,03	1,03	1,03	1,03	0,83	0,83	0,83	1,06	0,83	0,83	0,83	0,83	0,70	0,70	0,70	1,32	0,70	0,70	0,70	0,70

Indicator	MTL-ECM 43+1								CSS-ECM 53+1							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,68	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,55	0,58	0,58	1,37	0,58	0,58	0,58	0,58
ODP	0,60	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,47	0,58	0,58	1,37	0,58	0,58	0,58	0,58
AP	0,72	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,59	0,58	0,58	1,37	0,58	0,58	0,58	0,58
EP-freshwater	0,73	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,59	0,58	0,58	1,37	0,58	0,58	0,58	0,58
EP-marine	0,71	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,57	0,58	0,58	1,37	0,58	0,58	0,58	0,58
EP-terrestrial	0,71	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,57	0,58	0,58	1,37	0,58	0,58	0,58	0,58
POCP	0,70	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,56	0,58	0,58	1,37	0,58	0,58	0,58	0,58
ADP-minerals&metals	0,73	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,59	0,58	0,58	1,37	0,58	0,58	0,58	0,58
ADP-fossil	0,71	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,57	0,58	0,58	1,37	0,58	0,58	0,58	0,58
WDP	0,72	0,72	0,72	1,37	0,72	0,72	0,72	0,72	0,58	0,58	0,58	1,37	0,58	0,58	0,58	0,58

Indicator	MTL-ECM 14+1								MTL-ECM 24+1								MTL-ECM 34+1							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,64	0,65	0,65	1,19	0,65	0,65	0,65	0,65
ODP	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,77	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,61	0,65	0,65	1,19	0,65	0,65	0,65	0,65
AP	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,66	0,65	0,65	1,19	0,65	0,65	0,65	0,65
EP-freshwater	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,66	0,65	0,65	1,19	0,65	0,65	0,65	0,65
EP-marine	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,65	0,65	0,65	1,19	0,65	0,65	0,65	0,65
EP-terrestrial	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,65	0,65	0,65	1,19	0,65	0,65	0,65	0,65
POCP	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,65	0,65	0,65	1,19	0,65	0,65	0,65	0,65
ADP-minerals&metals	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,66	0,65	0,65	1,19	0,65	0,65	0,65	0,65
ADP-fossil	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,65	0,65	0,65	1,19	0,65	0,65	0,65	0,65
WDP	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	0,78	0,78	0,78	0,95	0,78	0,78	0,78	0,78	0,65	0,65	0,65	1,19	0,65	0,65	0,65	0,65

Indicator	MTL-ECM 44+1								CSS-ECM 54+1							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,64	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,54	0,58	0,58	1,36	0,58	0,58	0,58	0,58
ODP	0,56	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,46	0,58	0,58	1,36	0,58	0,58	0,58	0,58
AP	0,68	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,58	0,58	0,58	1,36	0,58	0,58	0,58	0,58
EP-freshwater	0,68	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,58	0,58	0,58	1,36	0,58	0,58	0,58	0,58
EP-marine	0,67	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,57	0,58	0,58	1,36	0,58	0,58	0,58	0,58
EP-terrestrial	0,67	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,57	0,58	0,58	1,36	0,58	0,58	0,58	0,58
POCP	0,65	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,55	0,58	0,58	1,36	0,58	0,58	0,58	0,58
ADP-minerals&metals	0,68	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,59	0,58	0,58	1,36	0,58	0,58	0,58	0,58
ADP-fossil	0,67	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,57	0,58	0,58	1,36	0,58	0,58	0,58	0,58
WDP	0,67	0,68	0,68	1,20	0,68	0,68	0,68	0,68	0,58	0,58	0,58	1,36	0,58	0,58	0,58	0,58

Indicator	MTL-ECM 13+2								MTL-ECM 23+2								MTL-ECM 33+2							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,43	0,44	0,44	0,81	0,44	0,44	0,44	0,44
ODP	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,52	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,41	0,44	0,44	0,81	0,44	0,44	0,44	0,44
AP	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44
EP-freshwater	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44
EP-marine	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44
EP-terrestrial	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44
POCP	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44
ADP-minerals&metals	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44
ADP-fossil	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44
WDP	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,67	0,53	0,53	0,53	0,66	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,81	0,44	0,44	0,44	0,44

Indicator	MTL-ECM 43+2								CSS-ECM 53+2							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,43	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,35	0,38	0,38	0,86	0,38	0,38	0,38	0,38
ODP	0,38	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,30	0,38	0,38	0,86	0,38	0,38	0,38	0,38
AP	0,46	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,38	0,38	0,38	0,86	0,38	0,38	0,38	0,38
EP-freshwater	0,46	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,38	0,38	0,38	0,86	0,38	0,38	0,38	0,38
EP-marine	0,45	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,37	0,38	0,38	0,86	0,38	0,38	0,38	0,38
EP-terrestrial	0,45	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,37	0,38	0,38	0,86	0,38	0,38	0,38	0,38
POCP	0,44	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,36	0,38	0,38	0,86	0,38	0,38	0,38	0,38
ADP-minerals&metals	0,46	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,38	0,38	0,38	0,86	0,38	0,38	0,38	0,38
ADP-fossil	0,45	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,37	0,38	0,38	0,86	0,38	0,38	0,38	0,38
WDP	0,45	0,45	0,45	0,84	0,45	0,45	0,45	0,45	0,38	0,38	0,38	0,86	0,38	0,38	0,38	0,38

Indicator	MTL-ECM 14+2								MTL-ECM 24+2								MTL-ECM 34+2							
	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D	A1-A3	A4	A5	B6	C2	C3	C4	D
GWP-GHG	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,52	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,43	0,44	0,44	0,79	0,44	0,44	0,44	0,44
ODP	0,67	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,51	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,41	0,44	0,44	0,79	0,44	0,44	0,44	0,44
AP	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,53	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,79	0,44	0,44	0,44	0,44
EP-freshwater	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,53	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,79	0,44	0,44	0,44	0,44
EP-marine	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,53	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,79	0,44	0,44	0,44	0,44
EP-terrestrial	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,53	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,79	0,44	0,44	0,44	0,44
POCP	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,52	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,43	0,44	0,44	0,79	0,44	0,44	0,44	0,44
ADP-minerals&metals	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,53	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,79	0,44	0,44	0,44	0,44
ADP-fossil	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,53	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,79	0,44	0,44	0,44	0,44
WDP	0,68	0,68	0,68	0,69	0,68	0,68	0,68	0,68	0,53	0,53	0,53	0,63	0,53	0,53	0,53	0,53	0,44	0,44	0,44	0,79	0,44	0,44	0,44	0,44

Additional Information

Thermal/Electrical Energy Calculation

The total thermal energy provided/to subtracted from the air of the room and the total electrical energy consumption along fan coil lifetime is been calculated by the following formula (based on *Technical Certification Rules Of The Eurovent Certified Performance Mark – Fan Coil Unit – Rev 00 2021):*

$$\textit{Total Thermal Energy } (kWh) = \textit{Cooling Energy} + \textit{Heating Energy}$$

where:

$$\textit{Cooling Energy} = (5\%\ P\ (c)_{high} + 30\%\ P\ (c)_{med} + 65\%\ P\ (c)_{low}) * h_{cooling} * \textit{Lifetime}$$
$$\textit{Heating Energy} = (5\%\ P\ (h)_{high} + 25\%\ P\ (h)_{med} + 70\%\ P\ (h)_{low}) * h_{heating} * \textit{Lifetime}$$

$$\textit{Total Electrical Consumption } (kWh) = \textit{Cooling Electrical Consumption} + \textit{Heating Electrical Consumption}$$

where:

$$\textit{Cooling Consumption} = (5\%\ Pe\ (c)_{high} + 30\%\ Pe\ (c)_{med} + 65\%\ Pe\ (c)_{low}) * h_{cooling} * \textit{Lifetime}$$
$$\textit{Heating Consumption} = (5\%\ Pe\ (h)_{high} + 25\%\ Pe\ (h)_{med} + 70\%\ Pe\ (h)_{low}) * h_{heating} * \textit{Lifetime}$$

- $P\ (c)_{high}$ / $P\ (c)_{med}$ / $P\ (c)_{low}$ = Total Cooling Capacity (kW) at high/med/low speed in cooling mode at standard rating conditions, according to EN1397
- $Pe\ (c)_{high}$ / $Pe\ (c)_{med}$ / $Pe\ (c)_{low}$ = Total Electrical Power Input (kW) at high/med/low speed in cooling mode according to EN1397
- $P\ (h)_{high}$ / $P\ (h)_{med}$ / $P\ (h)_{low}$ = Heating Capacity (kW) at high/med/low speed in cooling mode at standard rating conditions, according to EN1397
- $Pe\ (h)_{high}$ / $Pe\ (h)_{med}$ / $Pe\ (h)_{low}$ = Total Electrical Power Input (kW) at high/med/low speed in heating mode according to EN1397
- Medium speed is the standard fan speed as defined in EN 1397 (having 0Pa at inlet of the unit and 50 Pa at outlet of the unit), low/high speed are the other two speeds measured according to EN 1397
- *hcooling* and *hheating* are the yearly operational hours in cooling (1100hrs) and average heating (1500hrs) mode
- Lifetime= 20 years

Model	Total Thermal Energy (kWh)	Total Energy Consumption (kWh)
MTL-ECM 13	236.914,00	3.219,20
MTL-ECM 23	290.607,00	3.834,40
MTL-ECM 33	407.425,00	6.500,10
MTL-ECM 43	552.972,00	8.993,90
MTL-ECM 53	766.413,00	12.465,00
MTL-ECM 14	270.519,00	3.027,20
MTL-ECM 24	347.352,00	3.689,20
MTL-ECM 34	473.857,00	6.457,50
MTL-ECM 44	642.359,00	8.828,30

MTL-ECM 54	849.146,00	13.085,30
MTL-ECM 64	1.042.744,00	10.048,40
MTL-ECM 66	1.213.497,00	10.328,00
MTL-ECM 13+1	192.759,00	3.101,10
MTL-ECM 23+1	247.873,00	3.853,70
MTL-ECM 33+1	339.955,00	6.558,40
MTL-ECM 43+1	453.949,00	9.087,50
MTL-ECM 53+1	630.849,00	12.624,70
MTL-ECM 14+1	**206.692,00**	**3.027,20**
MTL-ECM 24+1	271.074,00	3.759,70
MTL-ECM 34+1	375.962,00	6.528,00
MTL-ECM 44+1	500.905,00	8.828,30
MTL-ECM 54+1	661.640,00	13.151,80
MTL-ECM 13+2	307.849,00	3.013,10
MTL-ECM 23+2	404.529,00	3.903,10
MTL-ECM 33+2	557.680,00	6.654,60
MTL-ECM 43+2	746.129,00	9.209,30
MTL-ECM 53+2	1.014.195,00	12.797,80
MTL-ECM 14+2	309.620,00	3.115,20
MTL-ECM 24+2	415.072,00	3.855,50
MTL-ECM 34+2	576.462,00	6.709,20
MTL-ECM 44+2	774.128,00	9.088,60
MTL-ECM 54+2	1.048.640,00	12.904,80
MTL-ECM 64+2	1.177.967,00	10.437,90
MTL-ECM 66+2	1.260.079,00	10.785,50

VERSION HISTORY

Version 1, 2026-11-03

- *Original Version of the EPD*

Abbreviations

Abbreviation	Definition
EN	European Norm (Standard)
EF	Environmental Footprint
EPD	Environmental Product Declaration
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CPC	Central product classification
SVHC	Substances of Very High Concern
ND	Not Declared

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